

Government Expenditure and Economic Growth in Nigeria: An Impact Analysis

Author Details: Mathias A. Chuba

Department of Economics, Achievers University Owo, Km 1, Idasen-Ute Road, P. M. B. 1030, Ondo State, Nigeria

Abstract:

In view of disagreement among economists on the impact of government expenditure on economic growth and in order to contribute to the debate, this paper evaluated the impact of government expenditure on economic growth in Nigeria using annual data from 1961 to 2019. The government expenditure is split into government recurrent expenditure and government capital expenditure. The Engle and Granger (1987) two-steps error correction model that allows for the measurement of the short and long run impact of a change in government recurrent expenditure and government capital expenditure on economic growth was employed. Investigation revealed that government recurrent expenditure constitutes the lion share of government total expenditure and government recurrent expenditure had a positive impact on economic growth in Nigeria in the short and long run; and government capital expenditure had a negative impact on economic growth in Nigeria in the long run. Government capital expenditure had a negative impact on economic growth because the money budgeted for capital projects were not religiously spent on the projects due to corruption. Economic growth will increase if more money is budgeted for government recurrent expenditure and if money budgeted for government capital projects is religiously spent on the projects.

Keywords: Government Expenditure, Economic Growth, Error Correction Model, Nigeria

1. Introduction

There is no consensus among economists on the impact of government expenditure on economic growth in both theoretical and empirical literature. There are three different views regarding the impact of government expenditure on economic growth. They are classical and public choice theorists; Keynesian and Ricardian views. According to classicists and public choice theorists, government expenditure has a negative impact on economic growth. The Keynesians believe that government expenditure has a positive impact on economic growth. The Ricardian view suggests that government expenditure has no impact on economic growth.

There are previous studies on the impact of government expenditure on economic growth in Nigeria with inconclusive results. For example, the study by Nurudeen and Usman (2010) indicates that both government capital expenditure and government recurrent expenditure have a negative impact on economic growth in Nigeria. The study by Egbetunde and Fasanya (2013) suggests that both government capital expenditure and government recurrent expenditure have a positive impact on economic growth in Nigeria. The study by Okoye et al. (2019) shows that government capital expenditure has a positive impact on economic growth and government recurrent expenditure has a negative impact on economic growth in Nigeria. The debate on the impact of government expenditure on economic growth is not yet resolved. Empirical evidence has not demonstrated conclusively whether government expenditure has a positive or negative or neutral impact on economic growth in Nigeria.

The findings by Nurudeen and Usman conform to the classical view. The findings by Egbetunde and Fasanya tally with Keynesian view. The findings by Okoye et al. are in line with Keynesian view on one hand and classical view on the other hand. Due to these discrepancies in findings from previous studies, one is not certain of the impact of government expenditure on economic growth in Nigeria.

In view of the above statement of the problem, this study is guided by the following research questions. (i) What is the relationship between government recurrent expenditure and economic growth in Nigeria in both the short and long run? (ii) What is the relationship between government capital expenditure and economic growth in Nigeria in both the short and long run? (iii) Does government recurrent expenditure have any impact on economic growth in Nigeria in both the short and long run? (iv) Does government capital expenditure have any impact on economic growth in Nigeria in both the short and long run?

The main objective of this study is to evaluate the impact of government expenditure on economic growth in Nigeria using annual data from 1961 to 2019. The followings are the specific objectives of this

paper. (i) To determine the relationship between government recurrent expenditure and economic growth in Nigeria in the short and long run. (ii) To determine the relationship between government capital expenditure and economic growth in Nigeria in the short and long run. (iii) To evaluate the impact of government recurrent expenditure on economic growth in Nigeria in the short and long run. (iv) To evaluate the impact of government capital expenditure on economic growth in Nigeria in the short and long run.

The following research hypotheses are tested in the course of this study. (i) Government recurrent expenditure does not have any relationship with economic growth in Nigeria in the short run. (ii) Government capital expenditure does not have any relationship with economic growth in Nigeria in the short run. (iii) Government recurrent expenditure does not have any relationship with economic growth in Nigeria in the long run. (iv) Government capital expenditure does not have any relationship with economic growth in Nigeria in the long run. (v) Government recurrent expenditure does not have any impact on economic growth in Nigeria in the short run. (vi) Government capital expenditure does not have any impact on economic growth in Nigeria in the short run. (vii) Government recurrent expenditure does not have any impact on economic growth in Nigeria in the long run. (viii) Government capital expenditure does not have any impact on economic growth in Nigeria in the long run.

This paper is significant because of the following reasons. First, it reveals that government recurrent expenditure constitutes the lion share of government total expenditure and government recurrent expenditure has a positive impact on economic growth in Nigeria. It shows that economic growth will increase if more funds are budgeted for government recurrent expenditure and if the lion share of government total expenditure that government recurrent expenditure constitutes over the years is sustained. This paper also finds that government capital expenditure has a negative impact on economic growth in Nigeria because the money that was budgeted for government capital projects was not religiously spent on the projects due to over invoicing, kickback, embezzlement, acquisition of inferior materials, and bad project delivery. It suggests that economic growth will increase in Nigeria if the money that is budgeted for government capital projects are religiously spent on the projects.

This paper consists of six sections. The next section is literature review. Section 3 presents the methodology. Section 4 discusses the results. The conclusions based on research findings are drawn in section 5 and section 6 suggests areas for further studies.

2. Literature Review

In literature, there are three different views regarding the impact of government expenditure on economic growth. They are public choice theorists and classical; Keynesian and Ricardian views. The classicists believe that government expenditure is bad for economic growth as a result of the crowding-out effect because government spending displaces critical investment by the private sector due to resource constraint. Hence, the relationship between the two is negative (Lowenberg, 1990). It is the viewpoint of public choice theorists that as government size increases, and given the distortionary effects of taxation, government levels of inefficiencies are bound to increase, hence government spending is bound to reduce economic growth (Nyasha and Odhiambo, 2019).

According to the Keynesian theory, government spending has a positive impact on economic growth. The Keynesian theory postulates that the more a government spends, the higher the economic growth is as a result of expansionary fiscal policy (Romer, 1986). The premise is that as the government spending trends up, production will follow suit, leading to aggregate demand stimulation, and therefore, increased levels of GDP. Private investment is another channel through which government spending can exert positive effects on economic growth. According to Ram (1986) and Ghali (1998), increasing government expenditure encourages private investment, which will translate to higher economic growth.

Ricardo (1820) stated that government spending can crowds-out or crowds-in private investment. According to him, government spending must be financed, now or in the future, by taxes. The more taxes imposed by the government, the less disposable income and the higher the cost of production to the private investors. With a lesser disposable income, the demand for the firms' products reduces. The private investment falls due to the reduction in the demand for the firms' products. Also, the increase in the cost of production reduces the profits of the firms and so these would result in a crowding-out effect on private investment. On the other hand, government spending can create favorable conditions for private investment, for instance, by providing infrastructure such as roads, highways, sewage systems, and harbors. Better

facilities may increase the productivity of private investment and reduce the cost of production of the private investors, a positive impact on the profitability of private investment. These would result in a crowding-in effect on private investment. Furthermore, government spending itself may directly crowd-in private investment, by contracting directly with private sector. State enterprises can also subcontract to private firms, directly increasing private investment. Thus, government expenditure has no impact on economic growth due to the Ricardian equivalence.

There are many empirical studies on the impact of government expenditure on economic growth in both developed and developing countries. Lupu et al. (2018) evaluated the impact of public expenditure on economic growth in 10 selected Central and Eastern European countries from 1995 to 2015 using autoregressive distributed lag (ARDL) model. Public expenditure was disaggregated into different components. They found that public expenditure on education and health have a positive impact on economic growth and public expenditure on defence, economic affairs, general public services, and social welfare have a negative impact on economic growth in the countries investigated.

Alexiou (2009) determined the impact of government spending on economic growth in South Eastern European (SEE) economies from 1995 to 2005 using both the fixed effects model and the random coefficient model. The results of the study showed that government expenditure has a positive impact on economic growth in the countries investigated.

Asghari and Heidari (2016) investigated the impact of government's size on economic growth in a sample of selected Organization for Economic Cooperation and Development – Nuclear Energy Agency (OECD-NEA) countries from 1990 to 2011 using the panel smooth transition regression (PSTR) model in the form of Cobb-Douglas production function. The results of the investigation do not conform to the linearity hypothesis.

Wahab (2011) determined the output growth effects of government spending in two samples – one sample for aggregated government spending in 97 developing and developed countries from 1960–2004 and the other sample for disaggregated government spending in 32 countries from 1980–2000 using symmetric and asymmetric models. The aggregated government spending was found to have a positive output growth effects. The results of the investigation from the sample for disaggregated government spending indicated that government investment spending has a positive output growth effects and government consumption spending has no significant output growth effects.

Hasnul (2015) determined the effects of government expenditure on economic growth in Malaysia from 1970 to 2014 using OLS regression model. Government expenditure was disaggregated into government operating expenditure and government development expenditure. Government expenditure was also split into expenditure on housing, education, defence and healthcare. The results of the investigation indicated that the aggregate government expenditure, government development expenditure and government expenditure on housing sector have a negative effect on economic growth and; government operating expenditure and expenditure on education, defence and healthcare sectors had no impact on economic growth in Malaysia.

Shahid et al. (2013) analyzed the impact of public expenditure on economic growth in Pakistan from 1972 to 2009 using ARDL model. The public expenditure was disaggregated into development expenditure and current expenditure. They found that development expenditure has a positive impact on economic growth and current expenditure has no impact on economic growth.

Attari and Javed (2013) examine the impact of government expenditure on economic growth in Pakistan from 1980 to 2010 using econometric analysis. The government expenditure was split into development expenditure and current expenditure. They found that both development expenditure and current expenditure have a positive impact on economic growth in the short run and long run.

Alshahrani and Alsadiq (2014) examined the impact of government spending on economic growth in Saudi Arabia from 1969 to 2010 using econometric techniques. Government spending was split into different components. They found that healthcare expenditure and expenditure on domestic investment have a positive impact on economic growth. The housing sector expenditure has a positive impact on economic growth only in the short run.

Landau (1983) determined the impact of government expenditure on economic growth in 65 under-developed countries using panel data analysis. Government expenditure was disaggregated into capital expenditure and consumption expenditure. The results of the study show that capital expenditure has a

positive impact on economic growth and government consumption expenditure has a negative impact on economic growth in the countries investigated.

Ghosh and Gregoriou (2008) investigated the impact of disaggregated components of government expenditure on economic growth in 15 developing countries using general methods of moment (GMM). The results were found to vary depending on the type of government expenditure. The government current spending has a positive impact on economic growth and government capital spending has a negative impact on economic growth. They also found that government expenditure on operations and maintenance has more significant positive impact on economic growth than government expenditure on education and health.

Guandong and Muturi (2016) determined the relationship between public expenditure and economic growth in South Sudan from 2006 to 2014 using ordinary least square (OLS) regression model and random-effects estimation technique for panel data. Government expenditure was disaggregated into different components. They found that public expenditure on infrastructure, productive sector and security have a positive relationship with economic growth and public expenditure on the social services sector has a negative relationship with economic growth.

Chirwa and Odhiambo (2016) investigated the determinants of long-run economic growth in South Africa from 1970 to 2013 using ARDL model. They found that government spending has a significant negative impact on economic growth in both the short run and long run.

Leshoro (2017) analyzed the impact of disaggregated government expenditure on economic growth in South Africa from 1976 to 2015 using ARDL model. Government expenditure was disaggregated into government investment expenditure and government consumption expenditure. The results of the investigation showed that both government investment expenditure and government consumption expenditure have a positive impact on economic growth in the long run and short run.

Yasin (2000) determined the impact of public spending on economic growth in 26 sub-Saharan African (SSA) countries from 1987 to 1997 using both fixed-effects and random-effects estimation techniques. The investigation was based on a model derived from an aggregate production function. The results of the investigation indicated that government expenditure has a positive impact on economic growth in SSA.

Kimaro et al. (2017) investigated the impact of government expenditure on economic growth in 25 Sub-Saharan African (SSA) low income countries from 2002 to 2015 using GMM. The results of the study showed that government expenditure has a positive impact on economic growth in the countries investigated.

Ndambiri et al. (2012) investigated the determinants of economic growth in 19 sub-Saharan African countries from 1982 to 2000 using GMM. Government expenditure was among the explanatory variables in their model. They found that government expenditure has a negative impact on economic growth in the countries investigated.

Nurudeen and Usman (2010) examined the impact of disaggregated components of government expenditure on economic growth in Nigeria from 1970 to 2008 using co-integration and error correction methodology. Government expenditure was disaggregated into capital expenditure, recurrent expenditure, expenditure on education, expenditure on transport and communication, and expenditure on health. They found that government expenditure on transport and communication, and on health, have a positive impact on economic growth and capital expenditure, recurrent expenditure and government expenditure on education have a negative impact on economic growth in Nigeria.

Egbetunde and Fasanya (2013) determined the impact of public expenditure on economic growth in Nigeria from 1970 to 2010 using ARDL model. Public expenditure was disaggregated into capital expenditure and recurrent expenditure. They found that recurrent expenditure and capital expenditure have a positive impact on economic growth and total public expenditure had no impact on economic growth in Nigeria.

Gukat and Ogboru (2017) examined the impact of government expenditure on economic growth in Nigeria from 1981–2016 utilizing ordinary least square technique and error correction specification. The result for model 1 indicated that government expenditure on social and economic services have a negative impact on economic growth and government expenditure on administration has a positive impact on economic growth. The result for model 2 indicated that government expenditure on administration and social services have a negative and insignificant impact on economic growth and government expenditure on

economic services has a positive and insignificant impact on economic growth. They concluded that government expenditure has not translated into meaningful economic growth in Nigeria.

Ifarajimi and Ola (2017) investigated the impact of government expenditure on economic growth in Nigeria from 1981 to 2015 using ordinary least square with error correction specifications. Government expenditure was split into government expenditure on education, social and community services; economic services, and transfer payments. They found that government expenditure on administration, social and community services; and economic services have a negative impact on economic growth and government expenditure on transfer payments has a positive and insignificant impact on economic growth.

Nwaolisa and Chinelo (2017) determined the impact of government expenditure on economic growth in Nigeria from 1983 to 2016 applying OLS method. Government expenditure was disaggregated into general administration, defence, education and health. All the components of government expenditure except government expenditure on defence were found to have a positive impact on economic growth, although government expenditure on health was statistically insignificant.

Okoye et al. (2019) analyzed the impact of disaggregated components of government expenditure on economic growth in Nigeria from 1981 to 2017. They found that capital expenditure has a positive impact on economic growth and recurrent expenditure has a negative impact on economic growth in Nigeria.

From empirical literature, previous studies did not evaluate the impact of government expenditure on economic growth in Nigeria from 1961 to 2019. Nigeria got her independence on 1st October, 1960. Although the annual data of government expenditure may not be available in 1960, they are available from 1961 to 2019. A detailed analysis of the impact of government expenditure on economic growth in Nigeria should begin from 1961 to 2019.

The results of the investigations of the impact of government expenditure on economic growth in Nigeria are mixed. For example, the study by Nurudeen and Usman (2010) indicates that both government capital expenditure and government recurrent expenditure have a negative impact on economic growth. The study by Egbetunde and Fasanya (2013) suggests that both government capital expenditure and government recurrent expenditure have a positive impact on economic growth. The study by Okoye et al. (2019) shows that government capital expenditure has a positive impact on economic growth and government recurrent expenditure has a negative impact on economic growth. The debate on the impact of government expenditure on economic growth is not yet resolved. Empirical evidence has not demonstrated conclusively whether government expenditure has a positive or negative or neutral impact on economic growth in Nigeria.

The debate on the impact of government recurrent expenditure and government capital expenditure on economic growth in Nigeria is due to the fact that the previous researchers did not have the first hand impression about the variables. To have the first hand impression about the variables entails inspection of the series. Instead of doing this, the previous researchers used only econometric tools in data analysis. While the use of econometrics is important in research, the results of econometric investigation should be in conformity with the behaviours of the variables as displayed in the table otherwise the results of econometric investigation will not be reliable.

3. Methodology

3.1 Theoretical Framework of the Study

The Keynesians want the government to intervene in the economy in order to correct market failures. Keynes (1936) believes that the Great depression needed government intervention as a short term cure. Increasing saving will not help but spending. He feels that government should increase public spending and this will increase consumers' income and the demand for goods and services. The producers will respond to increase in consumers' demand by increasing employment and producing more goods and services. This is the multiplier effect that shows the transmission mechanism from government expenditure to economic growth. Thus, the initial increase in public spending will lead to an increase in economic growth through an increase in household final consumption expenditure and gross private domestic investment. The Keynesian analysis of the impact of government expenditure on economic growth formed the basis of this research work.

3.2 Model Specification

This paper employs two-steps error correction model (ECM) developed by Engle and Granger (1987). An ECM is a standard way to model time series equations. The ECM makes it possible to deal with

non-stationary data series and separates the long and short run. Based on the theoretical framework of the study, gross domestic product and government expenditure which is split into government recurrent expenditure and government capital expenditure are included in the model. The functional form of the model for this study is stated in equation (1) below.

$$GDP_t = f(GRE_t, GCE_t) \quad (1)$$

Where **GDP** is gross domestic product, **GRE** is government recurrent expenditure, **GCE** is government capital expenditure, subscript **t** is current time and **f** is functional notation. The long run relationship among gross domestic product, government recurrent expenditure and government capital expenditure are expressed with an ordinary least square (OLS) regression model in equation (2).

$$GDP_t = \alpha_0 + \alpha_1 GRE_t + \alpha_2 GCE_t + U_t \quad (2)$$

Where α_0 is constant term, α_1 and α_2 are the long run coefficients and U_t is the residual at time **t**. The coefficients, α_1 and α_2 measure the long run impact of a change in government recurrent expenditure and government capital expenditure on gross domestic product respectively. The short run relationship among gross domestic product, government recurrent expenditure and government capital expenditure are expressed with an ECM specification in equation (3).

$$\Delta GDP_t = \beta_0 + \beta_1 \Delta GRE_t + \beta_2 \Delta GCE_t - \Pi_1 ECM_{t-1} + e_t \quad (3)$$

Where Δ is the first difference operator, β_0 is constant term, β_1 and β_2 are the short run coefficients. The coefficients, β_1 and β_2 measure the short run impact of a change in government recurrent expenditure and government capital expenditure on a change in gross domestic product respectively. Π_1 is coefficient of the estimated lagged residual of equation (2) or error correction coefficient and shows how much of the disequilibrium is being corrected. ECM_{t-1} is error correction term, subscript **t** is current time, and e_t is white noise error term with zero mean and constant variance and all other variables are as previously defined. Based on the theoretical framework of the study, the coefficients of government recurrent expenditure and government capital expenditure are expected to be positive. The coefficient of ECM_{t-1} is expected to be negative. If the coefficient of ECM_{t-1} is zero, it shows that the model is in equilibrium. Suppose the coefficient of ECM_{t-1} is positive, it shows that the model is diverging from equilibrium and it will be restored to equilibrium but only after a long period of time. Conversely, a negative coefficient of ECM_{t-1} shows that the model is converging towards the equilibrium and it will be restored to equilibrium within the short run. The first differences of the variables are used for ECM specification because all the variables are stationary at the first differences.

3.3 Model Estimation Procedure

The table of the series is inspected in order to have the first hand impression about the variables before model estimation. The Augmented Dickey-Fuller (ADF) unit root test of Dickey and Fuller (1979) is used to verify whether the variables are non-stationary. The long-run relationships among the variables are verified using Engle-Granger co-integration test. The ordinary least squares regression model is estimated in order to determine the long run relationships between the independent variables and dependent variable. The short run error correction model is estimated in order to determine the short run relationships between the independent variables and dependent variable and to measure the deviation of the variables from long run equilibrium within the short run and the speed of adjustment of the variables to long run equilibrium. The statistical reliability of the models is tested using R-squared, F-statistic, and p-value of F-statistic. The data is analyzed using e-view 10.

3.4 Sources and Description of Data

The empirical analysis is conducted using annual data. The time span covered is 1961 to 2019. The choice of 1961 as a base year is due to the fact that Nigeria got her independence on 1st October, 1960 and the annual time series data of the variables that are used for the study are available from 1961. The choice of 2019 as a terminal year is premised on the fact that the annual time series data of the variables that are used for the study are available up to that year. The gross domestic product at current basic prices, federal government recurrent expenditure and federal government capital expenditure are used as proxies of economic growth, government recurrent expenditure and government capital expenditure respectively. The data of these three variables are in millions naira from 1961 to 1980 and in billions naira from 1981 to 2019. The data from 1961 to 1980 are converted to billions naira by dividing each of them by 1000 so that they can be in the same unit of measurement with the data from 1981 to 2019. The data of all the variables are obtained from Central Bank of Nigeria Statistical Bulletin, Golden Jubilee Edition, December 2008 and Volume 30, December 2019.

The trends of gross domestic product (GDP), government recurrent expenditure (GRE) and government capital expenditure (GCE) in Nigeria from 1961 to 2019 are shown as indicated in Table 1 (Appendix). Due to the long periods covered in this study and due to the heterogeneous nature of the series, substantial information will be lost if the data are presented in a graph. So, in this study, the trends of gross domestic product, government recurrent expenditure and government capital expenditure are presented in a table instead of a graph. Government recurrent expenditure exhibits an upward trend and so does gross domestic product. This shows that there is a positive relationship between government recurrent expenditure and gross domestic product in Nigeria.

Government capital expenditure decreases from ₦0.07 billion in 1961 to ₦0.06 billion in 1963, ₦0.13 billion in 1968 to ₦0.12 billion in 1969, ₦0.19 billion in 1970 to ₦0.17 billion in 1971, ₦5.20 billion in 1978 to ₦4.22 billion in 1979, ₦10.16 billion in 1980 to ₦4.10 billion in 1984, ₦8.53 billion in 1986 to ₦6.37 billion in 1987, ₦498.03 billion in 1999 to ₦239.45 billion in 2000, ₦438.70 billion in 2001 to ₦241.69 billion in 2003, ₦1152.80 billion in 2009 to ₦888.87 billion in 2010, ₦918.55 billion in 2011 to ₦874.83 billion in 2012, ₦1108.39 billion in 2013 to ₦783.12 billion in 2014 and ₦818.37 billion in 2015 to ₦653.61 billion in 2016 even though gross domestic product was rising during the periods. This trend analysis shows that there is a negative relationship between government capital expenditure and gross domestic product in Nigeria during the reviewed period. Gross domestic product has a negative relationship with government capital expenditure in Nigeria because the money budgeted for government capital projects are not religiously utilized on the projects due to over invoicing, kickback, embezzlement, acquisition of inferior materials and bad project delivery. The trends of government recurrent expenditure and government capital expenditure reveal that government recurrent expenditure constitutes the lion share of government total expenditure in most of the periods under investigation.

4. Results

4.1 Unit Root Test

The unit root test is conducted using Augmented Dickey-Fuller (ADF) test as indicated in Table 2 (Appendix). All the variables are non-stationary at levels because ADF test statistic is less than test critical values in absolute terms and p-value of each variable is greater than 5 percent at 1 percent, 5 percent and 10 percent levels of significance. All the variables are stationary at first differences because ADF test statistic is greater than test critical values in absolute terms and p-value of each variable is greater than 5 percent at 1 percent, 5 percent and 10 percent levels of significance. The ADF test indicates that the variables are of the same order of integration at 1 percent, 5 percent and 10 percent level of significance. The variables are co-integrated because they are of the same order of integration. Since the variables are co-integrated, there is a long run equilibrium relationship between them.

4.2 Engle-Granger Co-integration Test

The cointegration test is conducted using Engle-Granger cointegration test as indicated in Table 3 (Appendix). The Augmented Dickey-Fuller test statistic is greater than the test critical values and p-values are less than 5 percent at 1 percent, 5 percent and 10 percent levels of significance. These results indicate that the residual is stationary. Stationarity of residual implies that the variables in the equation that generate the residual are cointegrated (Engle and Granger, 1987).

There are two conditions that make a given model not spurious: (i) The variables should be non-stationary at levels, but they should be stationary at first differences. (ii) The residuals of the estimated models should be stationary. The models specified in this paper are not spurious because the variables are non-stationary at levels but they are stationary at first differences and the residual of the estimated models is stationary.

4.3 Two-Steps Error Correction Estimates

Two-steps error correction estimates are of two parts. The first part is ordinary least squares estimates and the second part is short run error correction estimates. While the ordinary least squares estimates shows the long run impact of the independent variables on dependent variable, the short run error correction estimates shows the immediate impact of a change in independent variables on a change in dependent variable and the speed of adjustment of the variables to long run equilibrium.

The ordinary least squares estimates of GDP are presented as indicated in Table 4 (Appendix). The coefficient of government recurrent expenditure is positive and statistically significant. The government recurrent expenditure has significant positive impact on gross domestic product in the long run. The coefficient of government capital expenditure is negative and statistically significant. The government capital expenditure has significant negative impact on gross domestic product in the long run. The finding that government capital expenditure has a negative impact on gross domestic product does not tally with Keynesian economic theory because Keynes believes that government capital expenditure has positive influence on gross domestic product. The government capital expenditure has a negative impact on gross domestic product in Nigeria because the money budgeted for government capital projects was not religiously utilized on the projects due to over invoicing, kickback, embezzlement, acquisition of inferior materials and bad project delivery.

The coefficient of determination is 99.02 percent. This implies that 99.02 percent variation in gross domestic product is explained by government recurrent expenditure and government capital expenditure; and 0.98 percent variation in gross domestic product is explained by other factors outside the model in the long run. The F-statistic of 2833.179 and p-value of F-statistic of zero percent shows that the overall regression model is statistically significant.

The short run error correction estimates of D(GDP) are presented as indicated in Table 5 (Appendix). The coefficient of government recurrent expenditure is positive and statistically significant. The government recurrent expenditure has significant positive impact on gross domestic product in the short run. The coefficient of government capital expenditure is negative and statistically insignificant. The government capital expenditure has insignificant negative impact on gross domestic product in the short run. The coefficient of error correction term is negative and statistically significant. The negative sign of the error correction term indicates a backward movement toward long run equilibrium from short run disequilibrium. Table 4 reveals that the deviation of the model in the short run from long run equilibrium is corrected by 33 percent in one year.

The coefficient of determination is 69.63 percent. This implies that 69.63 percent variation in a change in gross domestic product is explained by a change in government recurrent expenditure and government capital expenditure; and 30.37 percent variation in a change in gross domestic product is explained by a change in other factors outside the model in the short run. The F-statistic of 41.2638 and p-value of F-statistic of zero percent shows that the overall regression model is statistically significant.

4.4 Test of Research Hypotheses

The hypotheses that are tested in this sub-section are stated in section 1 of this paper. The first and third hypotheses are rejected because government recurrent expenditure has a significant positive relationship with economic growth in Nigeria in the short and long run. The second and sixth hypotheses are accepted because government capital expenditure does not have a significant negative relationship with economic growth and it does not have a significant negative impact on economic growth in Nigeria in the short run. The fourth and fifth hypotheses are rejected because government capital expenditure has a significant negative relationship with economic growth in Nigeria in the long run and government recurrent expenditure has a significant positive impact on economic growth in Nigeria in the short run. The seventh and eight hypotheses are rejected because government recurrent expenditure has a significant positive

impact on economic growth and government capital expenditure has a significant negative impact on economic growth in Nigeria in the long run.

4.5 Summary of Research Findings

From the investigation of the impact of government expenditure on economic growth in Nigeria, the followings are the summary of research findings.

- i. Government recurrent expenditure has a positive relationship with economic growth in Nigeria in the short and long run.
- ii. Government capital expenditure has a negative relationship with economic growth in Nigeria in the long run.
- iii. Government recurrent expenditure has a positive impact on economic growth in Nigeria in the short and long run.
- iv. Government capital expenditure has a negative impact on economic growth in Nigeria in the long run.
- v. Government capital expenditure has a negative impact on economic growth in Nigeria because the money that was budgeted for government capital projects was not religiously spent on the projects due to over invoicing, kickback, embezzlement, acquisition of inferior materials, and bad project delivery.
- vi. The government recurrent expenditure constitutes the lion share of government total expenditure as stated in sub-section 4.1 of this paper.

4.6 Policy Implications of Research Findings

- i. Economic growth will increase if more funds are budgeted for government recurrent expenditure.
- ii. Economic growth will increase if the money that is budgeted for government capital projects are religiously spent on the projects.
- iii. Economic growth will increase if the lion share of government total expenditure that government recurrent expenditure constitutes should be sustained.

5. Conclusions

The following conclusions based on research findings are drawn. Government recurrent expenditure has led to an increase in economic growth in Nigeria. Government capital expenditure has led to a decrease in economic growth in Nigeria because the money that was budgeted for government capital projects was not religiously spent on the projects due to over invoicing, kickback, embezzlement, acquisition of inferior materials, and bad project delivery. Economic growth has increased in Nigeria over the years because government recurrent expenditure constitutes the lion share of government total expenditure.

6. Suggestions for Further Studies

The finding that government recurrent expenditure has a positive impact on economic growth in Nigeria conforms to the finding of Egbetunde and Fasanya (2013). The finding that government capital expenditure has a negative impact on economic growth in Nigeria tallies with the finding of Nurudeen and Usman (2010). A confirmatory study of the impact of government recurrent expenditure and government capital expenditure on economic growth in Nigeria is suggested for future research. Further studies should also examine the nexus between corruption, government capital expenditure and economic growth in Nigeria.

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Appendix: List of Tables

Table 1: Gross Domestic Product at Current Basic Prices and Government Expenditure, ₦' Billion

YEAR	GDP	GRE	GCE	YEAR	GDP	GRE	GCE
1961	2.36	0.10	0.07	1991	596.04	38.24	28.34
1962	2.60	0.10	0.06	1992	909.80	53.03	39.76
1963	2.76	0.12	0.06	1993	1259.07	136.73	54.50
1964	2.89	0.14	0.08	1994	1762.81	89.97	70.92
1965	3.11	0.16	0.08	1995	2895.20	127.63	121.14
1966	3.37	0.18	0.08	1996	3779.13	124.29	121.93
1967	2.75	0.17	0.09	1997	4111.64	158.56	269.65
1968	2.66	0.22	0.13	1998	4588.99	178.10	309.02
1969	3.55	0.43	0.12	1999	5307.36	449.66	498.03
1970	5.28	0.72	0.19	2000	6897.48	461.60	239.45
1971	6.65	0.82	0.17	2001	8134.14	579.30	438.70
1972	7.19	1.01	0.45	2002	11332.25	696.80	321.38
1973	8.63	0.96	0.57	2003	13301.56	984.30	241.69
1974	18.82	1.52	1.22	2004	17321.30	1032.70	351.30
1975	21.48	2.73	3.21	2005	22269.98	1223.70	519.50
1976	26.66	3.82	4.04	2006	28662.47	1290.20	552.39
1977	31.52	3.82	5.00	2007	32995.38	1589.27	759.32
1978	34.54	2.80	5.20	2008	39157.88	2117.36	960.89
1979	41.97	3.19	4.22	2009	44285.56	2127.97	1152.80
1980	49.63	4.81	10.16	2010	54612.26	3109.38	883.87
1981	144.83	4.85	6.57	2011	62980.40	3314.51	918.55
1982	154.98	5.51	6.42	2012	71713.94	3325.16	874.83
1983	163.00	4.75	4.89	2013	80092.56	3689.06	1108.39
1984	170.38	5.83	4.10	2014	89043.62	3426.90	783.12
1985	192.27	7.58	5.46	2015	94144.96	3831.95	818.37
1986	202.44	7.70	8.53	2016	101489.49	4160.11	653.61
1987	249.44	15.65	6.37	2017	113711.63	4779.99	1242.30
1988	320.33	19.41	8.34	2018	127736.83	5675.19	1682.10

1989	419.20	25.99	15.03	2019	144210.49	6997.39	2289.00
1990	499.68	36.22	24.05	-	-	-	-

Notes:

1. GPD is gross domestic product, GRE is government Recurrent Expenditure and GCE is Government Capital Expenditure.

2. The data from 1961 to 1980 are converted from million to billion naira by dividing each of them by 1000.

Sources:

1. Central Bank of Nigeria Statistical Bulletin, 50 Years Special Anniversary Edition (Golden Jubilee Edition), December, 2008.

2. Central Bank of Nigeria Statistical Bulletin, Volume 30, December, 2019.

Table 2: Augmented Dickey-Fuller Test

Variables	Levels		First Differences		Order of Integration
	ADF test statistic	Prob*	ADF test statistic	Prob*	
GDP	0.7200	1.0000	-7.1528	0.0000	I(1)
GRE	-1.2530	0.8877	-6.1938	0.0003	I(1)
GCE	-2.9185	0.7546	-6.1661	0.0000	I(1)

Test critical values: 1% level -4.1658

5% level -3.5085

10% level -3.1842

*Mackinnon (1996) one sided p-values

Source: Author’s Computation Using E-view 10.

Table 3: Engle-Granger Co-integration Test Results

Variable	Level		Order of Integration
	ADF test statistic	Prob.*	
ECM	-4.8952	0.0010	I(0)

Test critical values: 1% level -4.1243

5% level -3.4892

10% level -3.1731

*Mackinnon (1996) one sided p-values

Source: Author’s Computation Using E-view 10.

Table 4: Ordinary Least Squares Estimates of GDP

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	36.5835	579.0299	0.0632	0.9498
GRE	26.3198	0.9236	28.4984	0.0000
GCE	-15.2335	3.1547	-4.8288	0.0000

R-squared: 0.9902 F-statistic: 2833.179 Prob(F-statistic): 0.0000

Source: Author’s Computation Using E-view 10.

Table 5: Short Run Error Correction Estimates of D(GDP)

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	888.2636	332.7121	2.6698	0.0100
D(GRE)	13.7433	1.4940	9.1991	0.0000
D(GCE)	-0.7796	2.3739	-0.3284	0.7439
ECM(-1)	-0.3302	0.0922	-3.5804	0.0007

R-squared: 0.6963 F-statistic: 41.2638 Prob(F-statistic): 0.0000

Source: Author’s Computation Using E-view 10.